PATENT SPECIFICATION

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COMPLETE SPECIFICATION

Improvements in or relating to Galvanising

I, TADEUSZ LIBAN, a Polish citizen, of 8, Biskupiastreet, Cracow, Poland, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to a method for applying a zinc coating to iron articles by means of a molten zinc bath.

When galvanising by this method, it is known to apply a fluxing medium to the surface of the molten metal in the bath.

It has already been proposed to utilise for this purpose a mixture of zinc chloride, ammonium chloride, zinc oxide and glycerine, which was applied to the bath as a thick and viscous paste. When heated, the mixture formed a foamy covering layer which acted chemically on the surface of the articles to be treated upon their introduction into the bath in order to clean and deoxidise the said surface.

According to this invention, I provide a flux for use with a galvanising method employing a molten zinc bath, consisting of one or more chlorides and zinc oxide which are melted by the heat of the molten bath to form a flux layer on the surface thereof.

In a modification of the invention a quantity of metallic zinc and/or other metal oxides and/or a zinc-aluminium alloy may be added to the chloride or chlorides and zinc oxide.

According to a further modification the flux may also contain a fluoride. Fluxes containing a fluoride, an alkali aluminium chloride or an alkali chloride, are adapted for use not only with the usual zinc baths, but also with zinc baths containing aluminium.

The method can also be carried out using a lead bath on which floats a zinc layer or a zinc layer containing aluminium, the flux being utilised on the surface of the molten lead.

Moreover, the flux could be applied to the articles to be treated before they are introduced in the bath. In this case, the surfaces of the articles would be dusted with the flux, which is in powdered form.

[*Price* 1/-]

The fluxes according to the invention could also be employed for cleaning the rotating rollers which serve for removing the articles, for example, iron plates, from the bath when the galvanisation is carried out mechanically.

EXAMPLE I.

Zinc oxide	3%
Ammonium-zinc chloride	97%

EXAMPLE II.

Zinc oxide	10%
Aluminium oxide	2%
Metallic zinc or zinc-aluminium alloy	6%
Ammonium chloride	82%

EXAMPLE III.

Zinc oxide	1%
Aluminium oxide	1%
Potassium fluoride	2%
Sodium-aluminium chloride	1%
Potassium chloride	1%
Iron oxide	0.5%
Lead oxide	0.2%
Stannic oxide	0.2%
Cadmium oxide	0.1%
Bismuth oxide	0.1%
Metallic zinc or zinc-aluminium alloy	4%
Ammonium chloride	88.9%

If desired, tungsten oxide, beryllium oxide or other metal oxides could be added to the flux.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. A flux for use with a galvanising method employing a molten zinc bath, consisting of one or more chlorides and zinc oxide which are melted by the heat of the molten bath to form a flux layer on the surface thereof.

2. A flux as claimed in claim 1, containing also metallic zinc, and/or a zinc aluminium alloy.

3. A flux as claimed in claim 1 or 2, containing also one or more other metal oxides, e.g., aluminium oxide, iron oxide, lead oxide, stannic oxide, cadmium oxide, or bismuth oxide.

4. A flux as claimed in any of the preceding claims, containing also a fluoride.

Price 25p

5. A flux as claimed in any preceding claim 1—3, in which the chloride or one of the chlorides is an alkali aluminium chloride or an alkali chloride.

6. In a galvanising method employing a molten zinc bath, the use of a flux as claimed in any of claims 1 to 5, said flux being applied to the surface of the article to be treated before it is introduced into the bath.

7. In a galvanising method employing a molten zinc bath and in which the galvanising is carried out mechanically, the use of a flux as claimed in any of claims 1 to 5 for cleaning the rotating rollers which serve for removing the articles from the bath.

8. A galvanising method employing a molten zinc bath and a flux as claimed in either of claims 4 or 5, said bath containing aluminium.

9. In a galvanising method employing a molten lead bath and a zinc layer or layer of zinc containing aluminium floated on the lead, the use of a flux as claimed in any of claims 1 to 5, said flux being used on the surface of the lead.

10. A galvanising process employing fluxes substantially as described in the accompanying examples.

11. Articles when galvanised by the process claimed in any of claims 6—10.

Dated this 23rd day of October, 1936.

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